

Chapter 8 Review

1. Find the sum of the measures of the interior angles of a convex 60-gon. $(n-2)180^\circ$

1. 10,440

2. A convex pentagon has interior angles with measures $(5x - 12)^\circ$, $(2x + 100)^\circ$, $(4x + 16)^\circ$, $(6x + 15)^\circ$, and $(3x + 41)^\circ$. Find x .

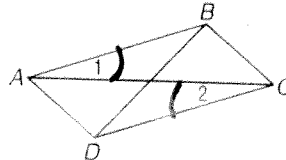
2. 19

3. If the measure of each interior angle of a regular polygon is 171, find the number of sides of the polygon. $180 - 171 = 9$

3. 40
 $360 \div 9$

4. In parallelogram $ABCD$,
 $m\angle 1 = x + 12$, and $m\angle 2 = 6x - 18$.
Find $m\angle 1$.

$$x + 12 = 6x - 18$$

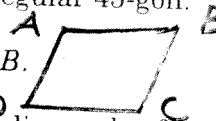


4. 18

5. Find the measure of each exterior angle of a regular 45-gon.

5. 8

6. In parallelogram $ABCD$, $m\angle A = 58$. Find $m\angle B$.

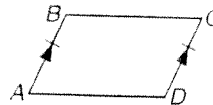


6. 122

7. Find the coordinates of the intersection of the diagonals of parallelogram $XYZW$ with vertices $X(2, 2)$, $Y(3, 6)$, $Z(10, 6)$, and $W(9, 2)$.

7. (6, 4)

8. Determine whether $ABCD$ is a parallelogram. Justify your answer.



Yes. $\overline{AB} \parallel \overline{CD}$
are \parallel

9. Use the Slope Formula to determine whether $A(5, 7)$, $B(1, -2)$, $C(-6, -3)$, and $D(2, 5)$ are the coordinates of the vertices of parallelogram $ABCD$.

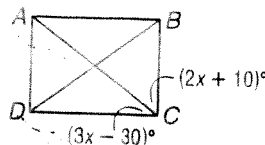
No; the slopes
are $\frac{9}{4}, \frac{1}{7}, 1, \frac{2}{3}$

10. If the slope of \overline{AB} is $\frac{1}{4}$, the slope of \overline{BC} is $-\frac{2}{3}$, and the slope of \overline{CD} is $\frac{1}{4}$, find the slope of \overline{DA} so that $ABCD$ will be a parallelogram.

10. $-\frac{2}{3}$

11. Given rectangle $ABCD$, find x .

$$2x + 10 + 3x - 30 = 90$$



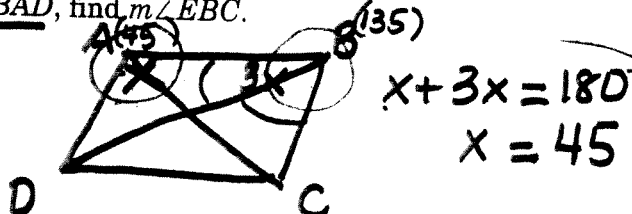
11. 22

12. $ABCD$ is a parallelogram and $\overline{AC} \cong \overline{BD}$. Determine whether $ABCD$ is a rectangle. Justify your answer.

Yes. The diag
are \cong

13. $ABCD$ is a rhombus with diagonals intersecting at E . If $m\angle ABC = 3m\angle BAD$, find $m\angle EBC$.

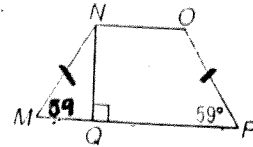
13. 67.5



14. $TUVW$ is a square with $U(10, 2)$, $V(8, 8)$, and $W(2, 6)$. Find the coordinates of T .

14. $(4, 0)$

15. Find $m\angle MNQ$ in isosceles trapezoid $MNOP$.



15. 31°

16. $ABCD$ is a quadrilateral with $A(8, 3)$, $B(6, 7)$, $C(-1, 5)$, and $D(-6, -1)$. Determine whether $ABCD$ is a trapezoid. Justify your answer.

Yes; $ABCD$ has exactly one pair of opp sides \parallel
 $\overline{BC} \parallel \overline{AD}$

17. The length of the median of trapezoid $EFGH$ is 13 feet. If the bases have lengths $2x + 4$ and $10x - 50$, find x .

17. 6

$$2 \left[13 = \frac{1}{2} (2x + 4 + 10x - 50) \right]$$

$$26 = 12x - 46$$

$$13 = \frac{1}{2} (2x + 4 + 10x - 50)$$

$$26 = 12x - 46$$

For Questions 19–25, write *true* or *false*.

19. A rectangle is always a parallelogram.

19. T

20. The diagonals of a rhombus are always perpendicular.

20. T

21. The diagonals of a square always bisect each other.

21. T

22. A trapezoid always has two congruent sides.

22. F

23. The median of a trapezoid is always parallel to the bases.

23. T

25. If the diagonals of a parallelogram are perpendicular, then the parallelogram is a rectangle.

25. F